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A Message from the State Health Director

In the seven months since I was appointed to serve as North Carolina's State Health Director. I have seen both the best of times and the worst.

Historic legislation passed in House Bill 2, preventing smoking in restaurants and bars with few exceptions. House Bill 2 was truly a collaborative "team" effort between legislative leaders, advocates, local health departments, and a new Governor standing together saying that second hand smoke is a significant health threat, and that protecting an exposed workforce is essential.

A syndemic, defined as two or more afflictions, interacting synergistically, contributing to excess burden of disease in a population, occurred with the simultaneous arrival of pandemic influenza and the worst economic downturn since the great depression. Preserving the public health infrastructure will be an ongoing challenge in the years to come.

Our state and local health public health agencies have risen to meet the new challenges of influenza pandemic. Our Epidemiology Section, State Laboratory for Public Health, and the Immunization Program have gone above and beyond the call of duty in responding to novel influenza H1N1 virus. Local health departments are leading their communities in planning and responding to the threat with continuous public health messaging and implementing mass vaccinations.

Moving forward to address the burden of poor health outcomes which are preventable, we are excited about a new state Prevention Action Plan, the culmination of the N.C. Institute of Medicine's Prevention Task Force. Working with the local Healthy Carolinians partnerships and the Governor's Healthy Carolinians Task Force, we are developing the Healthy People 2020 Goals for our state. The Prevention Action Plan provides partners with the evidenced-based strategies to use to improve community health.

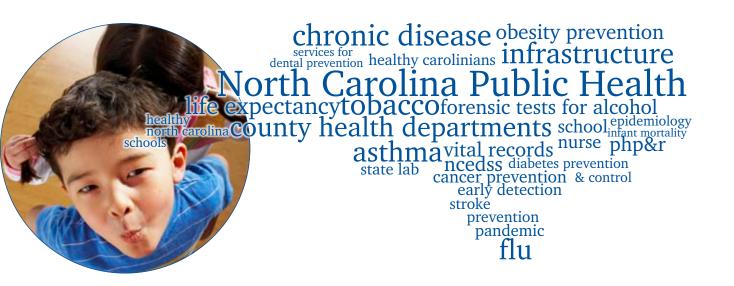
My hope is that you find this Annual Report informative, exciting, and full of challenges in the work that lies ahead in making North Carolina the healthiest state in the nation.

Jeffrey P. Engel, M.D. State Health Director

Introduction

North Carolina is a great state to live in. We are blessed with a growing population, a beautiful and diverse environment and a strong economy, despite periods of economic downturn. Even so, challenges to our health and safety still exist.

North Carolina Public Health is vigilant as these changes occur and stands ready to respond to keep the quality of life in North Carolina as great as it can be.



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Life Expectancy and Years of Life Lost for North Carolinians

The life expectancy at birth for North Carolina is 77.1 years, compared with the U.S. average of 77.7.¹ This is almost two years more than the state's life expectancy at birth in 1990 and four years more than the life expectancy in 1980. Premature mortality not only affects individuals and their families; it also impacts the state's productivity. *Table 1* shows the totals years of life lost and the average years of life lost for the leading causes of death in our state.

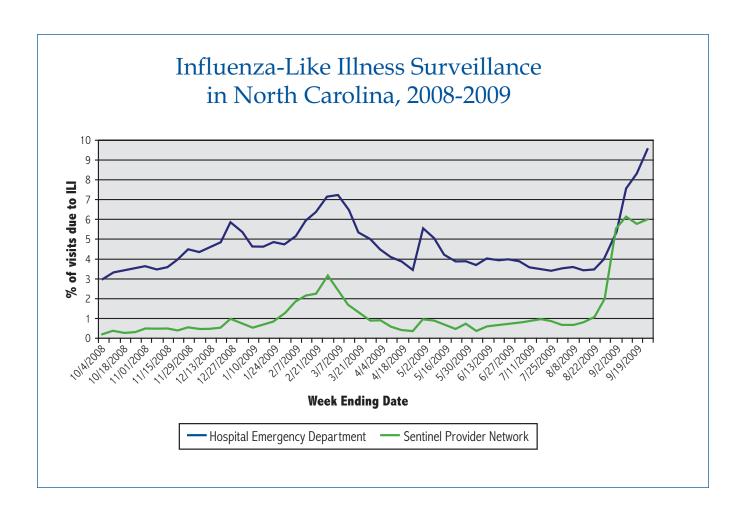
In 2008, North Carolinians who died lost an average of 9.4 years of life due to early death and a total of 725,671 total years of life lost. Motor vehicle injuries — which disproportionately involve younger people — caused the highest average number of years of life lost per death (34.9 years).

Table 1: 2008 N.C. 10 Leading Causes of Death: Total Deaths and Years of Life Lost

RANK	CAUSE	Total Deaths	Average Years of Life Lost	Total Years of Life Lost
1	Heart disease	17,417	6.3	109,702
2	Cancer	17,403	8.7	150,965
3	Chronic lower respiratory diseases	4,527	4.7	21,213
4	Stroke	4,477	4.6	20,680
5	Other unintentional injuries	2,713	22.1	59,966
6	Alzheimer's disease	2,620	0.5	1,385
7	Diabetes	2,164	8.3	18,067
8	Pneumonia & influenza	1,750	4.8	8,380
9	Nephritis, nephrotic syndrome, nephrosis	1,725	5.8	9,917
10	Motor vehicle injuries	1,544	34.9	53,858
Tota	l Deaths — All Causes	77,057	9.4	725,671

^{1.} Life Expectancy: North Carolina 1990-1992 and 2005-2007, State and County. North Carolina Division of Public Health, State Center for Health Statistics, 2009. Available at: www.schs.state.nc.us/SCHS/data/lifexpectancy/

^{2.} Heron MP, Hoyert DL, Murphy B, et al. Deaths: Final Data for 2006. National Vital Statistics Reports. 2009;57(14):1. Available at: www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_14.pdf



Responding to Pandemic Influenza

Since 2004, North Carolina has been planning for an influenza pandemic. A novel influenza A H1N1 virus (swine flu) was first identified through routine virologic surveillance in late March 2009. Outbreaks in Mexico, the US and later globally led the World Health Organization to declare a pandemic on June 11. North Carolina began its response on April 24, 2009. North Carolina confirmed its first case on May 3 and its first novel strain related death on June 24. Clusters were identified and investigated in a military base, elementary school, summer camps and in the community. In support of the extensive efforts at the local level, during the first 21 days, the Division's response included over 9,000 staff-hours in the Public Health Coordination Center and over 600 laboratory samples tested. Since the middle of May, continuous surveillance efforts through the Sentinel Provider Network and Hospital Emergency Department Surveillance have indicated a steady, low level incidence of illness. Beginning late August with the return of college and university students, North Carolina has entered the re-acceleration interval of the second pandemic wave. This public health emergency continues to require a multi-agency response with partial activation of the State Emergency Response Team. Community mitigation efforts and public education campaigns have intensified. The Division responded to a shortage of pediatric oseltamivir suspension by shipping federal and state stockpile supplies to all local health

departments. The first shipments of vaccine arrived in North Carolina on Oct. 5, and the Division is allocating vaccine and monitoring vaccine use on a weekly basis.

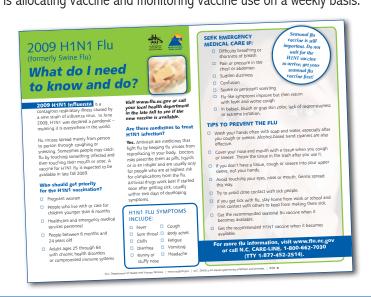




Photo Credit: Ted Richardson, News and Observer

Preventing Chronic Disease and Injury

Milestone for Tobacco Prevention and Control



The 2006 Report of the Surgeon General of the United States made it clear that the debate is over: secondhand smoke is a serious health hazard and causes early death and disease in

North Carolinians who do not smoke. In addition, this is a costly problem in North Carolina. According to a study released in 2009, *North Carolina's Secondhand Smoke Healthcare Cost Burden*, \$288.8 million is spent each year in North Carolina to treat health conditions caused by exposure to secondhand smoke.

The Tobacco Prevention and Control Branch worked to build support for evidence based tobacco prevention and control policies. Working with many partners and legislative champions, House

bill 2, An Act to Prohibit Smoking in Certain Public Places and Certain Places of Employment, passed in 2008-2009. Beginning Jan. 2, 2010, the public will see these new changes as a result of this new law:

- Smoking will not be allowed in enclosed areas of almost all restaurants and bars. The new law does not apply to certain cigar bars that are open only to people over the age of 21.
- Smoking will not be allowed in enclosed areas of lodging establishments, such as hotels, motels, bed and breakfasts, and inns, if the establishment prepares and serves food or drink. An establishment may designate 20 percent of its quest rooms as smoking rooms.
- Local governments, such as cities and counties, will have new authority to adopt local laws regulating smoking in public places. A local law may not change the state law to allow smoking in restaurants, bars and lodging establishments, but it could prohibit smoking in more places. There are several limitations on and exceptions to this new local authority.

Creating Healthy Communities

The obesity epidemic is harming the health of North Carolinians. In our culture of convenience, eating smart and moving more are the exception, not the norm. The Physical Activity and Nutrition Branch focuses on shifting that cultural norm. We empower communities to make schools, worksites and neighborhoods healthier places to live, learn, earn, play and pray. Eighty-three of North Carolina's 85 local health departments participate in the statewide health promotion Program. Two local health departments chose not to participate. The Physical Activity and Nutrition Branch support participating health departments in working with community coalitions to promote healthy eating and physical activity. Coalitions work in as many as six different settings - local worksites, schools, preschools, healthcare facilities, faith communities, and the community at large — to ensure that healthy choices and environments are available to support citizens to eat smart and move more.

In 51 local health departments, community coalitions are working in three or more settings to promote healthy eating and physical activity. In 19 of those districts, community coalitions are working in four or more settings.

During the 2009-10 fiscal year, community coalitions across the state are collectively working to:

- Establish or enhance 15 parks or recreational facilities to promote physical activity;
- Make 74 enhancements to built environments, such as walking trails or bike paths, to promote physical activity;
- Establish or enhance 24 gardens and nine farmers' markets to promote fruits and vegetables;
- Implement 44 incentive programs to reward healthy eating and physical activity;
- Enhance 12 stairwells to encourage physical activity;
- Create or expand 10 bike/pedestrian plans and one master recreation plan, which include construction details for bike, pedestrian and recreational facilities;

- Improve eight worksites or other settings to better support breastfeeding; and,
- Offer 165 educational programs on healthy eating and physical activity.

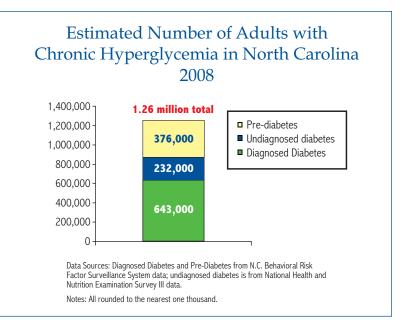
The Statewide Health Promotion Program, in collaboration with local Healthy Carolinians partnerships, will be instrumental in implementing the evidenced-based strategies in the Prevention Action Plan (released in October of 2009 from the N.C. Institute of Medicine and the Division of Public Health). This community-based effort will enable North Carolina to most effectively meet the Healthy North Carolinian 2020 objectives.



Preventing and Controlling Diabetes

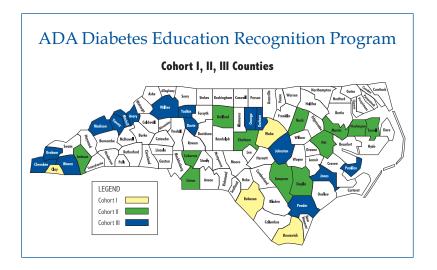
ADA Umbrella Program

In 2008, North Carolina ranked 17th highest for adult diabetes prevalence among all states in the U.S. All together there are approximately 1.25 million adults in North Carolina who had some form of hyperglycemia in the year of 2008. There is a disproportionate burden of diabetes among racial/ethnic minority populations. African Americans and American Indians experience a two-fold death rate from diabetes and complications as compared to the white population.





The Diabetes Prevention and Control Program (DPCP) mission is to reduce the burden of diabetes through leadership, education, surveillance, communication, community involvement and capacity building, advocacy, and policy development. An example of one program being implemented through the N.C. DPCP to address the increasing prevalence of diabetes in North Carolina is the ADA

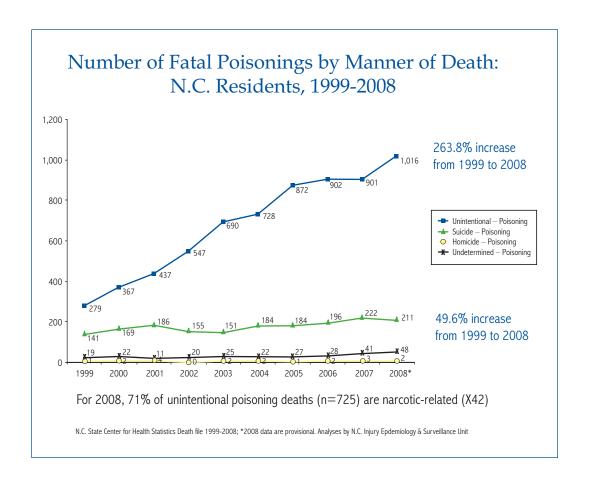


Diabetes Education Recognition Program. North Carolina is the first state in the nation to have an ADA "umbrella" recognized program to provide diabetes self-management education in state agencies including local health departments. The North Carolina Diabetes Education Recognition Program collaborates with local health departments across the state to establish multi-sites as well as provide and increase access to comprehensive diabetes self-management education. In addition, the ADA recognized programs can provide revenue for local health departments via Medicaid, Medicare and other insurers billing for diabetes self-management education. This establishes the capacity needed at the local level to provide this service to the uninsured and underinsured populations. There are three cohorts. Cohort I has four LHDs in four counties, Cohort II has 10 LHDs in 12 counties and Cohort III has 14 LHDs in 16 counties.

Reducing Unintentional Poisoning Deaths, N.C. Residents 1999-2008

Since 1999, unintentional poisoning deaths in North Carolina have increased to epidemic proportions. In 1999, North Carolina had 279 deaths (3.5 per 100,000) compared to 1,016 deaths in 2008 (11.0 per 100,000), an increase of over 200 percent in the past decade. The primary cause of death (71%) for the majority of these cases is associated with narcotics (prescription opioids and cocaine/heroin). In collaboration with the Office of the Chief Medical Examiner (OCME), the Injury and Violence Prevention Branch (IVPB) has been working with State Bureau of Investigations (SBI), Federal Drug Enforcement Agency (DEA), Division of Mental Health/Developmental Disabilities and Substance Abuse Service (MH/DD/SAS) to enhance surveillance activities as recommended by the Unintentional Drug Overdose Task Force Report (2004). This public health crisis continues to require a multiple agency response because no one agency has all the relevant information but it is clear that these deaths are due to a combination of misuse, abuse and diversion. In 2009, Senate Bill 628 was passed to facilitate better provider communication and to allow the OCME access to the MH/DD/SAS's Controlled Substance Reporting System (CSRS) which documents prescriptions for controlled substances. By using CSRS each unintentional poisoning death's toxicology results can be cross-checked with the decedent's prescription history to better investigate the cause of death. In addition, IVPB has been conducting a pilot surveillance project in three counties (Durham, New Hanover and Wilkes) to obtain additional information on deaths from OCME records, law enforcement incident reports and the CSRS.

Furthermore, IVPB has helped provide data and technical assistance to support community efforts such as Project Lazarus, an innovative prevention program in Wilkes County that provides a naloxone (narcotic antidote) kit and training to recognize and respond to symptoms of a drug overdose to patients who receive an opioid prescription from their medical care provider.



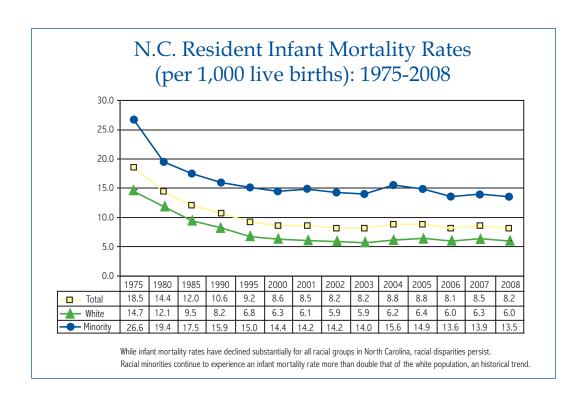
Improving Women's and Children's Health

Priority: Every Child Succeeds

We aim to help every child in every family in North Carolina achieve his or her full potential. Success in childhood requires a healthy start, which entails the prevention of unintended pregnancies and the poor birth outcomes associated with them. It requires high quality preconceptional and prenatal care and risk-appropriate intrapartum care. It requires universal newborn screening and early intervention. It requires healthy nutrition and protection against vaccine-preventable diseases. It requires the availability of evidence-based family support initiatives that help each family achieve the universal goal of success for its children. It requires school-based support for health promotion, basic health care needs and social-emotional support. It requires supporting teens avoiding the 'new' morbidities of adolescence. It includes the development of healthy lifestyles that constitute the foundational protections against the premature development of chronic diseases. It requires supporting children with special needs in special ways.

We recognize that childhood success requires an ecological approach: success in childhood requires empowered families and healthy communities. It requires concerted, collaborative efforts across health programs, social service programs, educational programs; it requires public-private collaboration and community-based efforts. It requires targeted efforts and investments in populations experiencing higher rates of infant mortality. For example, specific outreach is required to eliminate the historical disparity that babies born to African American females are two times more likely to die before their first birthday than babies born to white females.

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Priority: Women's Health Supported Across the Lifecycle

We aim to support the health and well-being of the women of North Carolina across the lifecycle. We begin by promoting the reproductive health of women, by ensuring access to family planning services, by promoting preconceptional care and by supporting high quality prenatal care. In the context of reproductive health, we promote healthy lifestyles that are critical for all women, both those intending to become pregnant and those who are not. We support the nutritional well-being of pregnant women and mothers, and promote breastfeeding. In collaboration with a wide range of partners, we help support women throughout the lifecycle in achieving and maintaining good health.

Kids Count Overall Ranking

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Ohio 28 Michigan 27	Montana	30	
Michigan 27	Delaware	29	
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There are currently 10 KIDS COUNT measures: percent low birth-weight babies; infant mortality rate; child death rate; rate of teen deaths by accident, homicide, and suicide; teen birth rate; percent of children living with parents who do not have full-time, year-round employment; percent of teens who are high school dropouts; percent of teens not attending school and not working; percent of children in poverty; and percent of families with children headed by a single-parent.

Source: Kids Count Data Center, Annie E. Casey Foundation

Investing in Women's and Children's Health Makes Sense

Priority: Securing a High Return on Investment

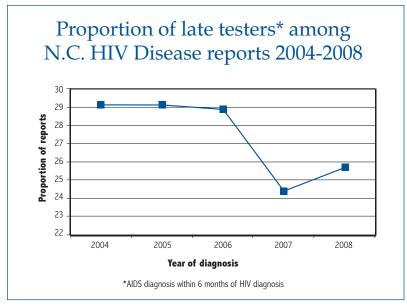
We consider it a critical responsibility to ensure that the resources entrusted to us are used in ways that provide a high return on the investment made by the people of North Carolina in women's and children's health. In order to achieve this high return, we employ the following five practices:

- We identify activities and programs that are evidence-based and have demonstrated a high return on investment;
- We implement these activities and programs with fidelity to evidence-based practice or through implementation of best practices;
- We support these activities and programs with an adequate infrastructure;
- We employ effective quality improvement cycles; and,
- We disseminate successes, to the extent that resources can be identified to do so.

Epidemiology and Sexually Transmitted Disease Surveillance

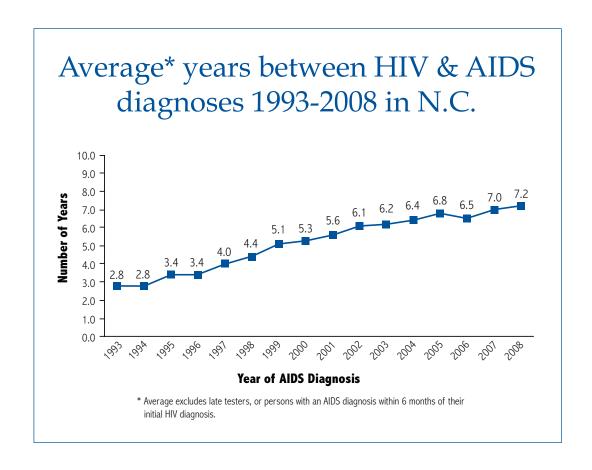
Increased HIV Testing Has Postive Impact — The graph illustrates a decrease of late testers (persons with an AIDS diagnosis at or near their initial HIV diagnosis) among new diagnoses for HIV in North Carolina. As more people get tested earlier for HIV, we should see late testers representing a smaller proportion of new reports. From 2004 to 2006, late testers have represented about 29 percent of new HIV diagnosis. In 2007 late testers as a proportion of new reports dropped to around 25 percent. This decrease coincides with and is likely the result of HIV initiatives such as increased targeted testing (Get Real Get Tested and the expansion of testing public health clinics), new HIV testing recommendations for

the general population, and changes in administrative rules that streamlined the consent process for testing. The changes to administrative rules (effective Nov. 1, 2007) included the removal of pre-test counseling as a requirement for HIV testing, the clarification that consent for HIV testing can be included as part of consent for other medical tests, and the requirement that pregnant women be tested for HIV at delivery if testing was not done as a part of prenatal care.



Access to HIV/AIDS Care and Treatment Improved

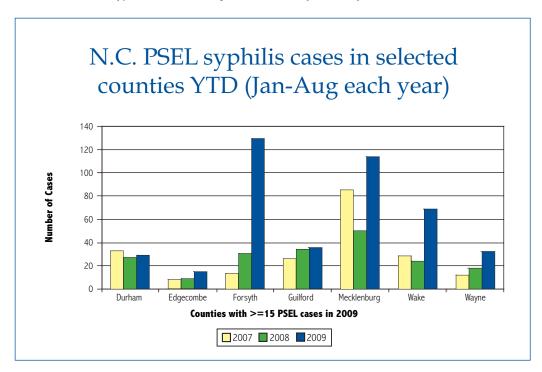
This graph illustrates the increase in average number of years between an HIV diagnosis and a subsequent AIDS diagnosis. Since the mid 1990s and introduction of antiretroviral drugs to combat the progression of HIV disease, we have seen increases in the length of time between HIV and AIDS diagnosis observed in our North Carolina surveillance data. This is expected and generally indicates an improvement in health status (care) for HIV infected persons on a broad level. Continued access to effective drug treatments should further improve health status for infected persons and continue the trend.



North Carolina Syphilis Morbidity Alert

North Carolina has experienced a 90 percent increase in reported early syphilis (primary, secondary and early latent) in the first eight months of 2009 as compared to 2008. This increase has been noted statewide and is especially apparent in some of our largest counties (see attached chart). Syphilis is an example of a preventable and easily treatable disease that can be controlled using a strong public health response model. Continued community awareness of the risk of sexually transmitted diseases as well as the ongoing vigilance of private and public providers to screen and treat these diseases is critical.

In 2009, there were seven counties that reported at least 17 early syphilis — Primary, Secondary and Early Latent (PSEL) — cases from January through August. These counties represent 71 percent of all PSEL cases for the state. The chart compares the 2009 cases to the same reporting period in previous years. State public health and local health department staff collaborated to increase syphilis awareness and conduct a special community testing event to find undetected syphilis cases on Aug. 28-29 in Forsyth County.

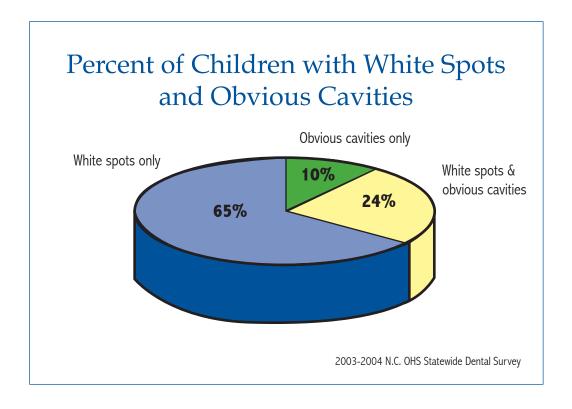




Opportunities in Oral Health

The Problem – Dental Disease Not Going Away

Tooth decay affects more children than any other chronic infectious childhood disease, in spite of the fact that it is almost entirely preventable. It starts as a reversible white spot on the tooth, and this early stage tooth decay can remineralize (repair itself) in response to fluoride therapy and other preventive oral health interventions. Without preventive intervention, these white spots progress to visible irreversible tooth decay that can lead to tooth loss, pain and suffering.



Benefits of Prevention

The Division of Pubic Health's Oral Health Section's 2003-2004 Statewide Dental Survey of North Carolina School Children looked at both obvious tooth decay and early stage tooth decay. Results show that



the actual amount of decay is underestimated by 35-40 percent when early stage tooth decay is not included. These early stage cavities are the ones that have the potential to best respondto dental preventive interventions. Graph 1 shows that 89 percent of the children examined have early stage tooth decay, demonstrating the need to enhance preventive strategies so these early cavities do not progress to the point that they have to be filled.



Conclusion

Life-long prevention and management of this infectious disease requires essential public health preventive interventions. The Section's preventive (dental sealants, school-based fluoride mouth rinse, and promotion of community water fluoridation, fluoride varnish and topical fluoride treatments) and educational services reduce tooth decay among North Carolina children, resulting in decreased treatment costs to parents. Reducing tooth decay will reduce the pain and suffering children endure from infected teeth and gums and enhance the quality of life for children and parents alike. Children experiencing pain are distracted and unable to learn in school, cannot eat well or sleep at night, experience speech problems and suffer from reduced self-esteem. Healthy, well-educated children grow up to be healthy and more productive citizens.

Summary of Significant 2009 Legislative Action

Ratified House Bill 2. **Prohibit Smoking in Certain Public Places.** This historic legislation will ban smoking restaurants and bars with very few exceptions.

Ratified House Bill 88. **Healthy Youth Act.** This bill will require local public school systems to provide medically accurate reproductive health and safety education in grades seven through nine.

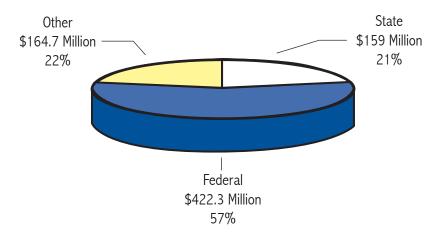
Ratified House Bill 1002. **Amend Public Health Related Laws.** This bill broadens public health authority to access information necessary for a communicable disease investigation.

Ratified Senate Bill 345. **Public Health Technical Changes.** This bill adds Public Health Preparedness and Quality Improvement as essential public health services.



Actual Earned Revenue

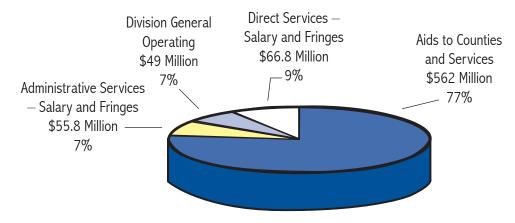
Sources of Funds for 2008-2009



78 percent of the funds to support DPH comes from federal and other sources, 22 percent from the state.

Actual Expenditures

Total Budget by Category 2008-2009



Public Health Funding

Revenue

- This pie chart depicts the total funding that the Division of Public Health actually earned in state fiscal year 2008-2009, \$746 million.
- The majority of funding for the Division comes from federal sources, \$422.3 million or approximately 57 percent.
- \$159 million or approximately 21 percent of the Division's funding comes from state appropriation.
- At \$164.7 million, other sources of funding make up 22 percent of the Division's funding. Some examples of these funding sources include private grants, fees, rebates, transfers from other agencies, and permits.

Expenditures

- This pie chart breaks the actual expenditures of the Division of Public Health into four categories.
- Administrative services salary and fringes are made up of the salary, social security, and retirement etc. of those positions in The Division that do not provide actual client service. Staff includes those that work on the program areas, budget, contracting. This makes up approximately \$55.8 million or 7 percent of expenditures.
- Division General Operation at \$49 million or 7 percent of the Division expenditures includes expenditures e.g. legal services, supplies, equipment, employee travel, repairs, telephone, insurance.
- Direct Services Salary and Fringe at \$66.8 million or approximately 9 percent is the expenditures for salary and benefits for Division employees who provide direct client services.
- The largest expenditure area for the Division is aid-to-county and services. These expenditures include drug expenses and WIC Food expenses. Also included in this are the funds expended by Local Health Departments. This category is \$562 million and approximately 77 percent of the Divisions expenditures.







State of North Carolina | Beverly Eaves Perdue, Governor

Department of Health and Human Services | Lanier M. Cansler, Secretary

Division of Public Health | Jeffrey P. Engel, M.D., State Health Director

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The North Carolina Public Health Foundation